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Subject: Capacitors

Posted by [Manualblock](#) on Mon, 14 Feb 2005 22:13:31 GMT

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I pulled the caps out of the box like a sixpac of Bud. Man these things are huge. And the transformer, you really don't get a sense of the size of these things from the pics. I feel like I am in Bedrock, with Fred and Barney. This will be one extra pre-amp el grande. Bought some steel I-Beam to hold 'em up.

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Subject: Re: Capacitors

Posted by [colinhester](#) on Mon, 14 Feb 2005 22:56:45 GMT

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There's going to be a lot of weight when things are done - that's for sure. I'm using an L-channel under the chassis. This will be placed in under the front mounting holes of both Tx's and the choke, thus fewer screws poking through the top (thanks GarMan). Have you started to lay out the CCS? I ran into a concern last night the way I have things on the PC board. The output to the coupling cap and the power (B+ from MOSFETs) are pretty close together, about 1/2". I'm hoping I'm not going to run into any problems with noise. I think this is where the shielded cable is really going to come in handy.....Colin

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Subject: Re: Capacitors

Posted by [Manualblock](#) on Mon, 14 Feb 2005 23:33:25 GMT

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I just received my coupling caps and Trans. so tomorrow I start lay-out. Were you able to use Damir's photos for your CCS boards? When you say boards; do you mean PC boards and if so where did you get them etched? You never stated if you got the red LED's or where you got them. I'm trying to form a mental pic of the set-up over the I-Beams. What exactly do you have tied to the beam? If you ended up using the wood side panels how are mounting your RCA inputs?

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Subject: Re: Capacitors

Posted by [colinhester](#) on Mon, 14 Feb 2005 23:44:48 GMT

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Damir's photo was invaluable in putting together the CCS. Keep it handy. PC board is not the correct term. I used the plastic breadboards, the ones with lots of holes. You can get them at Rat

Shack for a couple of bucks.I got the LED from Parts Express. Rated at 1.7V and 20mA.The L-beam has the 5687 heater parts and the CCS bread board.RCA ins and outs will be mounted on the top plate ala Forepaly.I'm having a bitch of a time placing all three caps under the hood. I wanted to mount the PS cap through a hole and out the top, but I decided against it. I think this is something I'm going to regret later on.My hook-up and bus wires were sent to day, so I should be up and running by the weekend (now there's some famous last words!)What do you think of the new Tx? Now you can imagine my surprise when I picked my box up expecting only one to be in there. The spare Heyboer is sitting here. I'll hang on to it for as long as you like - no rush AT ALL.....Colin

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Subject: Re: Capacitors

Posted by [Manualblock](#) on Tue, 15 Feb 2005 12:30:27 GMT

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Yeah;the breadboard PC is what I thought you meant. It isn't hard to etch PC traces but in the prototype stage it probably isn't wise. Have you thought about what you would build with the extra trans?They told me they would take the extras back if you needed them too.Even if we found a good use there is still one extra unless someone else here wants to build their amp with it.They are real nice pieces of work so anyone out there it's not too late!And cheap too, you won't get anything like them for anywhere near the price.Now's the time to get rid of those cheap peanut tube pre-amps. Believe me I noticed a huge difference when I went from 12ax7 to 6sn7's in my home system.

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Subject: Re: Capacitors

Posted by [PakProtector](#) on Tue, 15 Feb 2005 13:26:40 GMT

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Hey-Hey!!!,ON the peanut tubes, the 5687 is the same size as an AU7/AT7/AX7 ( heh-heh-heh...).There is one more thing y'all may want to do. Prepare for adding a second 9-pin socket so that you can run the 12B4 with its lower gain. The mods are simple: 6 LED's instead of two. and of course the second socket. Heater current for two at 12.6 is .6A instead of .45 for the 5687. Minor tweaks of the supply \*MIGHT\* be required if you want to hit the heater voltage +/- 1%regards,Douglas

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Subject: Re: Capacitors

Posted by [Manualblock](#) on Tue, 15 Feb 2005 21:37:21 GMT

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You know that's right. How would you wire up 6 LED's together. I mean exactly the physical attachment of the pieces?

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Subject: LED's

Posted by [PakProtector](#) on Tue, 15 Feb 2005 22:40:59 GMT

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I take a strip of vector board about 5 holes wide and a few inches long for mounting them. Put them in series, and join the proper end to ground and put the other on the cathodes. Please refer to Damir's drawing, I have to look closely at a built up one before I solder a new string together. It is basically long leg to short, but I can't remember if the long or the short goes to the cathode( and the other to ground ). regards, Douglas

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Subject: Re: LED's

Posted by [Wayne Parham](#) on Wed, 16 Feb 2005 04:38:49 GMT

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Long lead is anode, connect positive.

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Subject: Re: Capacitors

Posted by [Wayne Parham](#) on Wed, 16 Feb 2005 04:40:38 GMT

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How 'bout two blue LED's? Two in series makes the forward-bias voltage 9.4v. They're groovy looking too.

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Subject: two words...

Posted by [PakProtector](#) on Wed, 16 Feb 2005 11:49:12 GMT

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Dynamic impedance. that and the only time I tried one it was noisy. Red is the lowest impedance( and even red ones vary amongst themselves ). Download the spec sheets and look at the I/V curves. steeper is better. Very small change in V and great change in I means low R. regards, Douglas

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Subject: but...

Posted by [PakProtector](#) on Wed, 16 Feb 2005 11:52:47 GMT

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the blue does look better. maybe they sound fine, I could have gotten two bad ones. it is a fairly cheap experiment when you get right down to it.regards,Douglas

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Subject: "Valve Amplifiers 3" - again :-)

Posted by [Damir](#) on Wed, 16 Feb 2005 12:26:36 GMT

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Page 47 - typical forward drop @10mA for cheap red LED is 1,7V , for the green 3,6V, for the blue 3,7V. But, internal resistance is about 4,3 Ohms for the red, green - 30 Ohms, blue - 26 Ohms.Author advises (pages 177- 178), that LED biasing is best for  $I_a > 10\text{mA}$ , high  $R_I$ , and small output signal voltage (distortion `cos of non-linear LED resistance). P.S. - I can't resist, I know that you don't like citations...

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Subject: "Valve Amplifiers 3"

Posted by [PakProtector](#) on Wed, 16 Feb 2005 12:43:52 GMT

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I got that book for Christmas. It has been useful.We have a few advantages not taken into account by the author. First and main one is the way the MOSFET CCS is used. The amplifier valve still sees a constant current. The load current is not taken from the regulated amount. If there is no variation in current the LED becomes more of a voltage ref instead of having to deal with varying current.We are also running with fairly small signal, so that admonition is accounted for.Besides, this ref agrees with my own research and has little if any internal contradiction. Some of the others( even some authored by folks revered almost to Godhood) have not been so clean.regards,Douglas

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